



Environmental Quality Advisory Board Report

Meeting Date: May 6, 2009 Item No. ____ Goal: Fiscal and Resource Management

Subject	Energy Efficiency and Conservation Block Grant (EECBG) Projects for Funding Recommendation to Council
Request	Request to consider the following: Recommendation on the Staff prioritized list of EECBG Project Funding Options See Attachment A Energy Block Grant Scenarios
Location	Citywide
Background	<p>The American Recovery and Reinvestment Act (ARRA) provides stimulus funding through a number of existing federal programs. One such program is the Energy Efficiency and Conservation Block Grant (EECBG) Program administered through the Department of Energy. The EECBG was established in 2007, but until ARRA had never been funded. Through EECBG, \$2.4M in formula funding is now available to Scottsdale. It is anticipated that other funding will be available under competitive funding grant programs.</p> <p>Guidance and process information for submitting programmed funding project applications. Scottsdale has not yet received guidance and process information for the competitive grant process. Eligible projects for programmed funding must fit into one of fourteen categories. See Attachment B for more detail on these categories.</p> <ol style="list-style-type: none">1. Development of an Energy Efficiency and Conservation Strategy2. Technical Consultant Services to develop energy efficiency and conservation strategy3. Residential and Commercial Building Energy Audits4. Financial Incentive Programs5. Energy Efficiency Retrofits6. Energy Efficiency and Conservation Programs for Buildings and Facilities7. Development and Implementation of Transportation Programs8. Building Codes and Inspections9. Implement Distributed Energy Resource Technologies

10. Material Conservation Programs
11. Reduction and Capture of Methane and Greenhouse Gases
12. Traffic Signals and Street Lighting
13. Renewable Energy Technologies on Government Buildings
14. Any Other Appropriate Activity

Analysis & Assessment

Staff analyzed project ideas submitted from throughout the organization based on requirements contained within the federal act, as well as three separate sets of evaluative criteria.

ARRA requirements

1. Extensive ARRA reporting, tracking requirements
2. No pools, golf courses
3. US iron and steel
4. Davis-Bacon prevailing wages
5. NEPA: Categorical exclusions for some activities, not for others
6. Performance period 36 months
7. Commit all funds within 18 months of award

There are three separate sets of evaluative criteria for projects — ARRA, EECBG and City of Scottsdale.

ARRA Goals/Criteria:

1. Preference to quick start/complete: Goal to use 50% of funds for activities that can be initiated by June 17, 2009.
2. Promote job creation, preservation and economic recovery

EECBG Goals/Criteria:

1. Reduce fossil fuel emissions in a manner that is environmentally sustainable and, to the maximum extent practicable, maximizes benefits for local and regional communities
2. Reduce the total energy use of the eligible entities
3. Improve energy efficiency in the building sector, the transportation sector, and other appropriate sectors

See Attachment C for detail on EECBG Program Principles and Desired Outcomes.

City Council Goals/Criteria (may be others):

1. Local job creation
2. Minimize or avoid creating future year unfunded operational costs
3. Achieve current and future operational cost savings

Attachments D & E are provided as well. Attachment D outlines the necessary content of an energy efficiency and conservation

strategy, which must accompany project applications under the EECBG Program. Attachment E is the City of Scottsdale EECBG Strategy description.

Staff's assessment of the submitted projects overall is that all nine projects meet the requirements, goals and criteria of the ARRA, EECBG and City of Scottsdale Council. The nine projects represent approximately \$5.3 million in funding, with \$2.4 million in programmed funding currently available to the City. The nine projects fall into three broad categories:

1. Focus on citywide operational/CIP savings
2. Focus on community benefit/private sector
3. Focus on future preparation/planning to decrease energy usage/costs

See Attachment F, the nine submitted project applications.

Staff Recommendation

Staff recommends: A. Focus on Balanced Portfolio of Projects

EQAB's Recommendation Options

- a) Support the staff recommendation A. Focus on Balanced Portfolio of Projects
- b) Recommend B. Focus on citywide operational/CIP savings
- c) Recommend C. Focus on community benefit/private sector
- d) Recommend D. Focus on future preparation/planning to decrease energy usage/costs
- e) No recommendation
- f) Other

Responsible Dept(s)

Planning and Development Services Dept.
Municipal Services Department
Intergovernmental Relations
With input from Water Resources Dept.

Staff Contact(s)

Larry Person, Sr. Environmental Coordinator

Approved By

Larry Person, Sr. Environmental Coordinator
480-312-7889 E-mail: lperson@ScottsdaleAZ.gov

Connie Padian
Administrator, Planning & Development Svcs.

David E. Richert
General Manager, Planning & Development Svcs.

Dan Worth
General Manager, Municipal Services

Attachments

- A. Energy Block Grant Scenarios
- B. EECBG Eligible Project Categories Detail
- C. EECBG Program Principles and Desired Outcomes Detail
- D. EECBG Energy Efficiency and Conservation Strategy criteria
- E. City of Scottsdale EECBG Strategy
- F. EECBG Project Applications

Attachment A: Energy Block Grant Scenarios

OVERALL STAFF RECOMMENDATIONS

A. FOCUS ON BALANCED PORTFOLIO OF PROJECTS

Priority	Project Name	Responsible Department	Amount	Notes
1	LED Roadway Lighting Retrofit	Municipal Services	\$1,200,000	<i>This amount is scalable and could be increased or reduced</i>
2	Water Campus and Gainey Ranch Reclamation Facility Blower Replacement	Water Resources	\$1,095,000	
3	Citywide Energy audit of all city of Scottsdale Facilities	Municipal Services	\$200,000	
4	Community Energy Audit Program	Planning and Development services	\$230,000	
5	Water, Wastewater and Reuse System Optimization Study	Water Resources	\$500,000	
6	Ball field Replacement Lighting	Community Services	\$1,462,595	<i>This amount is scalable and could be increased or reduced</i>
7	Energy Training for Code Compliance	Planning and Development Services	\$60,000	
8	PV Solar Panels for New Fire Stations	Fire Department	\$320,000	
9	Greening Scottsdale Commercial Rebate Program	Economic Vitality	\$500,000	

B. FOCUS ON CITYWIDE OPERATIONAL/CIP SAVINGS

Priority	Project Name	Responsible Department	Amount	Notes
1	LED Roadway Lighting Retrofit	Municipal Services	\$1,200,000	<i>This amount is scalable and</i>

				<i>could be increased or reduced</i>
2	Water Campus and Gainey Ranch Reclamation Facility Blower Replacement	Water Resources	\$1,095,000	
3	Ball field Replacement Lighting	Community Services	\$1,462,595	<i>This amount is scalable and could be increased or reduced</i>
4	PV Solar Panels for New Fire Stations	Fire Department	\$320,000	
5	Citywide Energy audit of all city of Scottsdale Facilities	Municipal Services	\$200,000	
6	Water, Wastewater and Reuse System Optimization Study	Water Resources	\$500,000	
7	Energy Training for Code Compliance	Planning and Development Services	\$60,000	
8	Greening Scottsdale Commercial Rebate Program	Economic Vitality	\$500,000	
9	Community Energy Audit Program	Planning and Development services	\$230,000	

C. FOCUS ON COMMUNITY BENEFIT/PRIVATE SECTOR

Priority	Project Name	Responsible Department	Amount	Notes
1	Community Energy Audit Program	Planning and Development services	\$230,000	
2	Greening Scottsdale Commercial Rebate Program	Economic Vitality	\$500,000	
3	Energy Training for Code Compliance	Planning and Development Services	\$60,000	
4	LED Roadway Lighting Retrofit	Municipal Services	\$1,200,000	<i>This amount is scalable and could be increased or</i>

				<i>reduced</i>
5	Water Campus and Gainey Ranch Reclamation Facility Blower Replacement	Water Resources	\$1,095,000	
6	Ball field Replacement Lighting	Community Services	\$1,462,595	<i>This amount is scalable and could be increased or reduced</i>
7	PV Solar Panels for New Fire Stations	Fire Department	\$320,000	
8	Citywide Energy audit of all city of Scottsdale Facilities	Municipal Services	\$200,000	
9	Water, Wastewater and Reuse System Optimization Study	Water Resources	\$500,000	

D. FOCUS ON FUTURE PREPARATION/ PLANNING TO DECREASE ENERGY USAGE/COSTS

Priority	Project Name	Responsible Department	Amount	Notes
1	Citywide Energy audit of all city of Scottsdale Facilities	Municipal Services	\$200,000	
2	Water, Wastewater and Reuse System Optimization Study	Water Resources	\$500,000	
3	Community Energy Audit Program	Planning and Development services	\$230,000	
4	Energy Training for Code Compliance	Planning and Development Services	\$60,000	
5	Greening Scottsdale Commercial Rebate Program	Economic Vitality	\$500,000	
6	LED Roadway Lighting Retrofit	Municipal Services	\$1,200,000	<i>This amount is scalable and could be increased or reduced</i>
7	Water Campus and	Water Resources	\$1,095,000	

	Gainey Ranch Reclamation Facility Blower Replacement			
8	Ball field Replacement Lighting	Community Services	\$1,462,595	<i>This amount is scalable and could be increased or reduced</i>
9	PV Solar Panels for New Fire Stations	Fire Department	\$320,000	

Attachment B: EECBG Eligible Project Categories Detail

1. Development of an Energy Efficiency and Conservation Strategy: Entities may use a grant received under this part to develop and/or implement a strategy for energy efficiency and conservation and to carry out activities to achieve the purposes of the program. All entities receiving direct formula grants from the DOE are required to submit a proposed strategy for approval.

2. Technical Consultant Services: Entities may retain technical consultant services to assist the eligible entity in the development of such a strategy, including formulation of energy efficiency, energy conservation, and energy usage goals; identification of strategies to achieve those goals through efforts to increase energy efficiency, reduce fossil fuel emissions or reduce energy consumption through investments or by encouraging behavioral changes. Entities may develop methods to measure progress in achieving the goals. Entities may develop and publish annual reports to the population served by the eligible entity describing the strategies and goals and the progress made in achieving them during the preceding calendar year.

3. Residential and Commercial Building Energy Audits: Entities may support the conduct of residential and commercial building energy audits.

4. Financial Incentive Programs: Entities may establish financial incentive programs and mechanisms for energy efficiency improvements such as energy saving performance contracting, on-bill financing, and revolving loan funds.

5. Energy Efficiency Retrofits: Grants may be made to nonprofit organizations and governmental agencies for the purpose of retrofitting existing facilities to improve energy efficiency.

6. Energy Efficiency and Conservation Programs for Buildings and Facilities: Entities may develop and implement energy efficiency and conservation programs for buildings and facilities within the jurisdiction of the entity. The range of activities includes the design and operation of the programs; the identification of the most effective methods for achieving maximum participation and efficiency rates; public education; measurement and verification protocols; and identification of energy efficient technologies.

7. Development and Implementation of Transportation Programs: Entities may develop and implement programs to conserve energy used in transportation, including but not limited to:

- Employee flex time programs;
- Promoting use of satellite work centers;
- Development and promotion of zoning guidelines or requirements that promote energy efficient development;
- Development of infrastructure such as bike lanes and pathways and pedestrian walkways;
- Synchronization of traffic signals;
- State/locals/regional integrated planning activities (i.e. transportation, housing, environmental, energy, land use) with the goal of reducing greenhouse gas emissions and vehicle miles traveled;
- Incentive programs to reduce commutes by single occupancy vehicles;

- Improvements in operational and system efficiency of the transportation system such as implementation of intelligent transportation system (ITS) strategies;
- Idle-reduction technologies and/or facilities to conserve energy, reduce harmful air pollutants, and greenhouse gas emissions from freight movement; and
- Installation of solar panels on interstate rights-of-way to conserve energy in highway operations and maintenance activities.

8. Building Codes and Inspections: Entities may develop and implement building codes and inspection services to promote building energy efficiency.

9. Energy Distribution: Entities may implement distributed energy resource technologies that significantly increase energy efficiency, including:

- District heating and cooling systems
- Combined heat and power systems
- Cogeneration systems
- Energy Storage systems
- Absorption chillers
- Desiccant humidifiers
- Micro turbines
- Ground source heat pumps

10. Material Conservation Programs: Entities may implement activities to increase participation and efficiency rates for material conservation programs, including source reduction, recycling, and recycled content procurement programs that lead to increases in energy efficiency.

11. Reduction and Capture of Methane and Greenhouse Gases: Entities may use grant funds to purchase and implement technologies to reduce, capture, and, to the maximum extent practicable, use methane and other greenhouse gases generated by landfills or similar waste-related sources, such as wastewater treatment plants, operations producing food waste, dairy farms and other animal operations.

12. Traffic Signals and Street Lighting: Entities may use grant funds to replace traffic signals and street lighting with energy efficient lighting technologies, including light emitting diodes; and any other technology of equal or greater energy efficiency.

13. Renewable Energy Technologies on Government Buildings: Entities may use grant funds to develop, implement, and install on or in any government building of the eligible entity onsite renewable energy technology that generates electricity from renewable resources, including solar energy; wind energy; fuel cells; and biomass.

14. Any Other Appropriate Activity: Entities may submit any other appropriate activity for approval in the Energy Efficiency and Conservation Strategy.

Attachment C: EECBG Program Principles and Desired Outcomes Detail

EECBG Program Principles and Desired Outcomes

PROGRAM PRINCIPLES

DOE has developed the following core principles to guide entities during the program and project planning process:

- Prioritize energy efficiency and conservation first as the cheapest, cleanest, and fastest ways to meet energy demand.
- To maximize benefits over the longest possible terms, entities should look for ways to link their energy efficiency efforts to long-term priorities (especially community economic development, community stabilization and poverty reduction efforts).
- Invest funds in programs and projects that create and/or retain jobs and stimulate the economy while meeting long term energy goals.
- Target programs and projects that will provide substantial, sustainable and measurable energy savings, job creation and economic stimulus effects.
- Give priority to programs and projects that leverage federal funds with other public and private resources, including coordinated efforts involving other Federal programs targeting community development funded through the Recovery Act such as the Community Development Block Grant program, HOME, and job training programs.
- To the extent possible, develop programs and strategies that will continue beyond the funding period.
- Ensure oversight, transparency, and accountability for all program activities.
- Enact policies that transform markets, increase investments, and support program goals.
- Develop comprehensive plans that benchmark current performance and set aggressive goals.

PROGRAM OUTCOMES

The EECBG Program is a crosscutting program. There are many possible outcomes that could result from successfully implementing programs, projects and activities at the state and local level. These desired outcomes help clarify the broad purposes stated in the legislation and can assist implementation, including overall development and administration of state and local programs. They can be used to help evaluate potential programs and projects, as well as understand the factors that affect the success of different activities, programs and projects.

Desired outcomes of the EECBG Program include:

- Increased energy efficiency, reduced energy consumption and reduced energy costs through efficiency improvements in the building, transportation and other appropriate sectors;
- New jobs and increased productivity to spur economic growth and community development;
- Accelerated deployment of market-ready distributed renewable energy technologies, including wind, solar, geothermal, hydropower, biomass and hydrogen technologies;
- Improved air quality and related environmental and health indicators associated with the reduction of fossil fuel emissions;
- Improved coordination of energy-related policies and programs across jurisdictional

levels of governance and with other local and community level programs in order to maximize the impact of this program on long-term local priorities;

- Increased security, resilience, and reliability of energy generation and transmission infrastructure;
- Leveraging of the resources of federal, state and local governments, utilities and utility regulators, private sector and non-profit organizations to maximize the resulting energy, economic and environmental benefits; and
- Widespread use of innovative financial mechanisms that transform markets.

Attachment D: EECBG Energy Efficiency and Conservation Strategy criteria

EECBG Energy Efficiency and Conservation Strategy criteria

1. Describe your government's proposed Energy Efficiency and Conservation Strategy. Provide a concise summary of your measureable goals and objectives, which should be aligned with the defined purposes and eligible activities of the EECBG Program. These goals and objectives should be comprehensive and maximize benefits community-wide. Provide a schedule or timetable for major milestones. If your government has an existing energy, climate, or other related strategy please describe how these strategies relate to each other.
2. Describe your government's proposed implementation plan for the use of EECBG Program funds to assist you in achieving the goals and objectives outlined in the strategy describe in question #1. Your description should include a summary of the activities submitted on your activity worksheets, and how each activity supports one or more of your strategy's goals/objectives.
3. Describe how your government is taking into account the proposed implementation plans and activities for use of funds by adjacent units of local government that are grant recipients under the Program (response not mandatory for Indian Tribes).
4. Describe how your government will coordinate and share information with the state in which you are located regarding activities carried out with grant funds to maximize energy efficiency and conservation benefits (response not mandatory for Indian Tribes).
5. Describe how this plan has been designed to ensure that it sustains benefits beyond the EECBG funding period.
6. The President has made it clear that every taxpayer dollar spent on our economic recovery must be subject to unprecedented levels of transparency and accountability. Describe the auditing or monitoring procedures currently in place or that will be in place (by what date), to ensure funds are used for authorized purposes and every step is taken to prevent instances of fraud, waste, error, and abuse.

Energy Efficiency and Conservation Block Grant (EECBG) Strategy

The following is a description of the City of Scottsdale's strategy for energy efficiency and conservation as aligned with the defined purposes and eligible activities of the Energy Efficiency and Conservation Block Grant (EECBG) Program.

The City's energy strategy addresses both public buildings and infrastructure efficiencies and conservation, i.e. facilities, operations and staff activities, and the promotion of energy efficiencies and conservation for the city's business community and citizens. For the city's facilities, operations and staff activities, the starting point is to survey, identify, quantify and prioritize opportunities for energy efficiencies and conservation. Potential investments in energy efficiency and conservation can be prioritized based on those projects with the highest payback and payoff opportunities. For the city's business community and citizens, the city will promote and facilitate private investment in energy efficiency and conservation improvements.

Scottsdale's energy efficiency and conservation goals and objectives are outlined in a number of existing City Council approved policies, codes and commitments.

- The 2005 Council adopted LEED Gold Policy established the highest national standard for new, municipal green buildings.
- In 2007 the City Council adopted the 2006 International Energy Code, with strengthened energy efficiency amendments as part of the city's Building Code requirements.
- Scottsdale's Council approved the city's 2001 General Plan, including an environmental element and energy efficiency and conservation components.
- A city process is underway to prepare and approve the 2011 General Plan, which will include a state mandated energy element.
- Multiple Council Resolutions on regional air quality improvements have been adopted since 1991. These Council Resolutions contain city commitments with direct and indirect impacts to energy efficiency and conservation in city operations.
- Through the city's participation in EPA's National Environmental Performance Track (NEPT) Program, the city established, tracked and reported performance annually on energy efficiency and conservation goals since 2000. Goals included:
 - kWh reductions/efficiencies from HVAC systems,
 - kWh reductions/efficiencies from heat pumps,
 - kWh reductions/efficiencies from chillers,
 - kWh reductions/efficiencies from coolers,

- kWh reductions/efficiencies from office lighting,
- kWh reductions/efficiencies from alternative/solar energy systems , on new LEED Gold city buildings, and
- use of alternative and clean fuels in city fleet vehicles.

All energy efficiency and conservation goals in the NEPT program have been met and exceeded to date.

All projects submitted by the City of Scottsdale under the EECBG Program will be implemented on the following schedule: encumber all funds within 18 months and complete all projects within 36 months. The city intends to implement ~3-4 other energy efficiency and conservation priority projects identified in energy audits with the next ~4-5 years, if appropriate funding is available. EECBG funds will assist the city in achieving the goals and objectives established in the Scottsdale City Council approved policies, codes and commitments described above. EECBG funding for projects identified as earmarked for citizen and/or business energy efficiency audits will assist our community to become more energy efficient.

The City of Scottsdale will continue to participate in the Maricopa Association of Governments (MAG) process to coordinate and share information with adjacent units of local, county, state and tribal governments. The city actively participates in other regional coordination and information sharing groups, networks and processes.

The city's 2001 General Plan and 2011 General Plan process is the long term strategic planning process that addresses sustained energy efficiency and conservation programs. In addition, since 1998 the city has produced a Sustainability Indicators Report every couple of years that tracks energy, environmental, economic and quality of life trends in Scottsdale on about 34 specific indicators.

All applications for projects submitted by the City of Scottsdale for stimulus bill funding are pre-approved by the City Council during a public process. The city has an internal group in the City Auditor's Office that can provide expertise with auditing, transparency and accountability as the city tracks, monitors and reports performance on projects funded through the EECBG.

Attachment F: EECBG Project Applications

AMERICAN RECOVERY & REINVESTMENT ACT (ARRA) – 2009

CITY OF SCOTTSDALE PROJECT INFORMATION SHEET

Application Deadline

April 24, 2009

1. Project Name: **LED Roadway Lighting Retrofit**
2. ARRA Federal Funding Department/Program: **EECBG**
3. City Department(s) & Staff Contact(s) Information:
 - a. Dan Worth, Municipal Services, x25550
 - b. Jeremy Dye, Municipal Services, x25635
4. Brief Description (2-3 paragraphs) describing project, activities, need, who served, measurable outcomes and benefits. Be sure to explain how this project will comply with all posted federal rules and regulations.

The scope of this proposed project is to replace at least 2,000 existing high pressure sodium street light fixtures along main arterial streets with LED street light fixtures. LED technology provides longer life, reduced maintenance, and lower energy consumption. LED lighting is a proven and reliable technology that has been used in many different applications. For instance, LED traffic signal modules have been used in the City's traffic signal system for over 10 years with an approximate energy savings of over \$150,000 per year. This proposed use of grant funding is a full-scale implementation of a pilot project that has been conducted by the City for the past year, in which LED street lights have been tested and monitored in field conditions for reliability and performance.

The funding for this grant will be used to purchase 2,000 LED street light fixtures, which equates to approximately 1/4 of the street light inventory currently owned by Scottsdale. This equipment will be installed over the course of one year by a qualified electrical contracting company, which complies with the federal ARRA mandate for the creation of jobs. Additionally, because LED technology is more reliable, longer lasting, and uses less electricity than standard street light fixtures, this also meets the requirement of being an energy-efficient technology. LED fixtures have a life-span of nearly 20 years, more than double that of conventional fixtures, and do not require regular relamping, which is a costly aspect of conventional fixtures.

LED street lights have been shown to reduce energy consumption, and subsequent energy costs, by 45 to 50%. Additionally, the reduction of maintenance costs to these new fixtures would be an additional 50 to 60% over the life of the fixture. For the purposes of this project, the replacement of 2,000 high-pressure sodium street light fixtures with LED street light fixtures, the savings in energy costs is anticipated to be from \$200,000 to \$240,000 beginning with the first year of installation and for every year after. In terms of energy consumption, the use of these LED fixtures would equate to saving over 1,188,000 kilowatts of electricity annually.

5. Number of jobs created or sustained with this project: 3 to 5 jobs to install fixtures.
6. Project timeline (estimated start/completion): Can all deadlines be met for obligation of funding and completion of the project?

The entire project is expected to take from 12 to 14 months from start to finish. The general timeline is: one month for procurement process for purchase of fixtures and contract to outside company to install fixtures; two months to begin receiving fixtures and commence installation process; installation process is anticipated to take no more than one year. This is within the federal deadline of 18 months to fully obligate all funds.

7. Budget

Total Project Cost: \$1,200,000
Amount from ARRA requested: \$1,200,000
Minimum amount acceptable to do project: 1,200,000
City/non-federal funding commitment if required, cash/in-kind by source: \$0

Indicate if Operating Project or Capital Project: This will be a capital project.

8. Any previous or current federal funding received? Detail when appropriation/grant \$ awarded.

No previous or current federal funding has been appropriated for this project.

9. Possible Partnerships with eligible institutions, businesses or non-profits to bring AARA funding to the community? None

10. Will this ARRA grant, if awarded, commit the City of Scottsdale to any long term or ongoing fiscal obligations beyond the grant period? Explain.
There are no long-term or ongoing obligations the City will be required to commit to in reference to this ARRA grant.

I support this proposed project and agree that my Department can implement it within the required guidelines and timeframe.


General Manager

4-16-07
Date

Once completed and signed, please submit to the Government Relations Office

AMERICAN RECOVERY & REINVESTMENT ACT (ARRA) – 2009

**CITY OF SCOTTSDALE
PROJECT INFORMATION SHEET**

Application Deadline

1. Project Name:

Water Campus Water Reclamation Facility Blower Replacement

2. ARRA Federal Funding Department/Program:

Energy Efficiency and Conservation Block Grant

3. City Department(s) & Staff Contact(s) Information:

Water Resources Department

Chris Hassert, Planning and Engineering Director

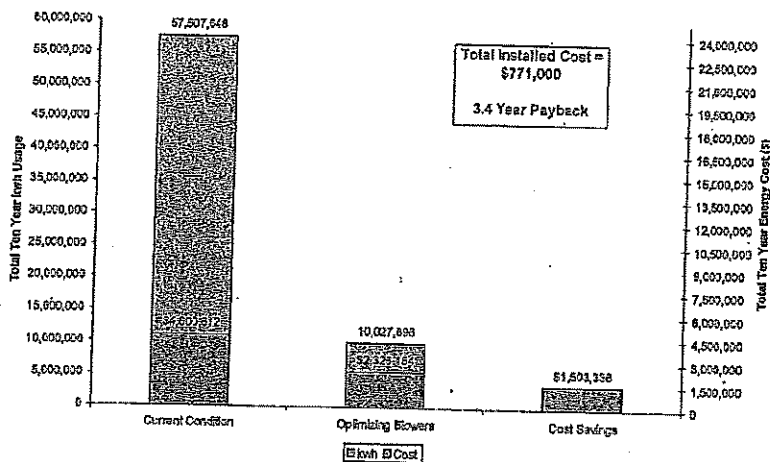
4. Brief Description (2-3 paragraphs) describing project, activities, need, who served, measurable outcomes and benefits. Be sure to explain how this project will comply with all posted federal rules and regulations.

The Water Campus Water Reclamation Facility treats up to 20 million gallons per day of domestic wastewater and uses four – 400 horsepower process air blowers that uses approximately 5.3 million kilowatt-hours of energy per year. The process air blower is an essential piece of equipment playing a major role in the treatment of the wastewater and is also one of the most energy intensive pieces of equipment at the reclamation facility.

Since the installation of these air blowers, more energy efficient blower technologies have been developed, such as the high speed turbo blower technology. This technology offers significant turndown capabilities and a lower installed horsepower to achieve the same flow rate.

The purpose of this project is to replace two of the existing blowers with the more efficient turbo type blower technology. The Replacement costs are estimated to be \$771,000 and include equipment, installation and engineering design costs. Over a 10 year period, the resultant energy savings will be 47.5 million kilowatt-hours, resulting in a net cost savings of \$1.5 million dollars. 47.5 million kilowatt-hours in energy equates to the carbon sequestered annually by 7,753 acres of pine or fir forests. This information is also depicted graphically below.

Two 5,400 scfm Existing Blowers vs. One 5,400 scfm Turbo & Two 2,700 scfm Turbo Blowers
Ten Year Operating Cost Forecast
Water Campus Reclamation Facility



5. Number of jobs created or sustained with this project: 15
6. Project timeline (estimated start/completion): Can all deadlines be met for obligation of funding and completion of the project?

Estimated start and completion of design: June 2009 through Sept 2009.

Estimated start and completion construction: Nov 2009 through Feb 2010.

7. Budget

Total Project Cost: \$771,000
Amount from ARRA requested: \$771,000
Minimum amount acceptable to do project: \$500,000
City/non-federal funding commitment if required, cash/in-kind by source: NA

Indicate if Operating Project or Capital Project: Capital Project

8. Any previous or current federal funding received? Detail when appropriation/grant \$ awarded. No.
9. Possible Partnerships with eligible institutions, businesses or non-profits to bring AARA funding to the community? NA
10. Will this ARRA grant, if awarded, commit the City of Scottsdale to any long term or ongoing fiscal obligations beyond the grant period? Explain.
No. Existing equipment will be replaced.

I support this proposed project and agree that my Department can implement it within the required guidelines and timeframe.



General Manager

4/23/09

Date

Once completed and signed, please submit to the Government Relations Office

AMERICAN RECOVERY & REINVESTMENT ACT (ARRA) – 2009

**CITY OF SCOTTSDALE
PROJECT INFORMATION SHEET**

Application Deadline

1. Project Name:

Gainey Ranch Water Reclamation Facility Blower Replacement

2. ARRA Federal Funding Department/Program:

Energy Efficiency and Conservation Block Grant

3. City Department(s) & Staff Contact(s) Information:

Water Resources Department

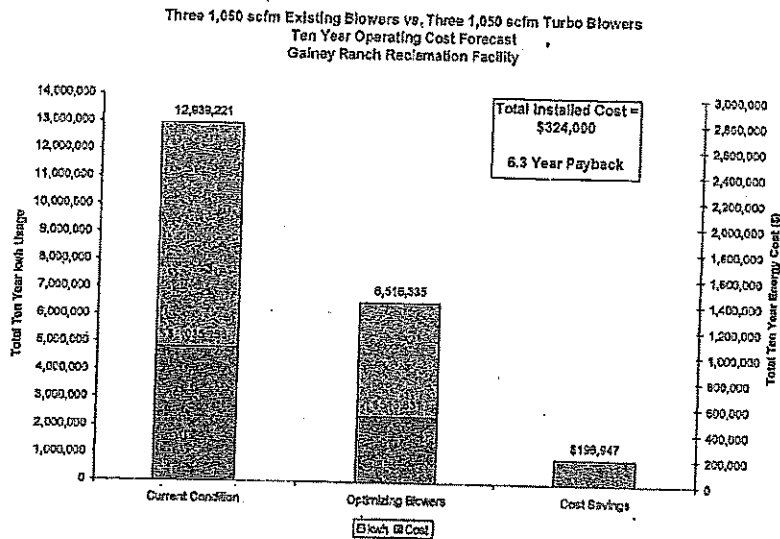
Chris Hassert, Planning and Engineering Director

4. Brief Description (2-3 paragraphs) describing project, activities, need, who served, measurable outcomes and benefits. Be sure to explain how this project will comply with all posted federal rules and regulations.

The Gainey Ranch Water Reclamation Facility treats up to 1.7 million gallons per day of domestic wastewater and uses three – 75 horsepower process air blowers that use approximately 1.1 million kilowatt-hours of energy per year. The process air blower is an essential piece of equipment playing a major role in the treatment of the wastewater and is also one of the most energy intensive pieces of equipment at the reclamation facility.

Since the installation of these air blowers, more energy efficient blower technologies have been developed, such as the high speed turbo blower technology. This technology offers significant turndown capabilities and a lower installed horsepower to achieve the same flow rate.

The purpose of this project is to replace the three existing blowers with the more efficient turbo type blower technology. Replacement costs are estimated to be \$324,000 and include equipment, installation and engineering design costs. Over a 10 year period, the resultant energy savings will be 6.4 million kilowatt-hours, resulting in an approximate overall energy cost savings of \$510,000 and a net cost savings of approximately \$200,000 dollars (accounting for the upfront equipment replacement cost). Saving 6.4 million kilowatt-hours in energy equates to 4,600 metric tons of greenhouse gases. This information is also depicted graphically below.



6. Number of jobs created or sustained with this project: 10

6. Project timeline (estimated start/completion): Can all deadlines be met for obligation of funding and completion of the project?

Estimated start and completion of design: June 2009 through Sept 2009.

Estimated start and completion construction: Nov 2009 through Jan 2010.

7. Budget

Total Project Cost: \$324,000
 Amount from ARRA requested: \$324,000
 Minimum amount acceptable to do project: \$324,000
 City/non-federal funding commitment if required, cash/in-kind by source:

Indicate if Operating Project or Capital Project: **Capital Project**

8. Any previous or current federal funding received? Detail when appropriation/grant \$ awarded. No.

9. Possible Partnerships with eligible institutions, businesses or non-profits to bring AARA funding to the community? NA

10. Will this ARRA grant, if awarded, commit the City of Scottsdale to any long term or ongoing fiscal obligations beyond the grant period? Explain.

No. Existing equipment will be replaced.

I support this proposed project and agree that my Department can implement it within the required guidelines and timeframe.



General Manager

4/23/09

Date

Once completed and signed, please submit to the Government Relations Office

AMERICAN RECOVERY & REINVESTMENT ACT (ARRA) – 2009

CITY OF SCOTTSDALE

Deadline PROJECT INFORMATION SHEET

Application

1. Project Name: Citywide Municipal Energy Audit Program
2. ARRA Federal Funding Department/Program: Energy Efficiency and Conservation Block Grant (EECBG Program)
3. City Department(s) & Staff Contact(s) Information: Public Works and Water Resources Department, Linda Butson
4. Brief Description (2-3 paragraphs) describing project, activities, need, who served, measurable outcomes and benefits. Be sure to explain how this project will comply with all posted federal rules and regulations.

An energy audit is the first step to assess how much energy a building consumes, and to evaluate what measures can be taken to make the building more energy efficient. An energy audit will show problems that will, when corrected, save significant amounts of money over time. Unlike an on-line energy assessment program (i.e. – SRP Home Energy Manager), an on-site audit can pinpoint where a building is losing energy. Audits also determine the efficiency of heating, cooling, ventilation, water heating and lighting systems.

A professional energy auditor uses a variety of testing techniques and equipment to determine the energy efficiency performance of a building. Testing includes a blower door test, which measures the extent of leaks in the building envelope; infrared cameras, which reveal hard-to-detect areas of air infiltration and missing insulation; and duct leakage tests. The audit also includes an evaluation of past utility bills and projected energy savings. A final evaluation report provides a summary of problem areas and recommended energy improvements with expected savings for each municipal building.

The citywide municipal energy audit program will provide baseline data to allow the city to target specific energy efficiency projects.

Certified energy auditors will provide consulting services to the city. The Arizona Energy Office will help facilitate energy audit protocol municipal buildings.

5. Number of jobs created or sustained with this project:

8-10 energy auditors; also the multiplier effect of contractor work based on recommended energy improvements will generate further jobs in the future.

6. Project timeline (estimated start/completion): Can all deadlines be met for obligation of funding and completion of the project?

Start: July 1, 2009 or when funding becomes available.

Completion: June 30, 2010

7. Budget

Total Project Cost: \$200,000

Amount from ARRA requested: \$200,000

Minimum amount acceptable to do project: \$100,000

City/non-federal funding commitment if required, cash/in-kind by source:

Indicate if Operating Project or Capital Project: Operating

8. Any previous or current federal funding received? Detail when appropriation/grant \$ awarded.

No

9. Possible Partnerships with eligible institutions, businesses or non-profits to bring AARA funding to the community?

No

10. Will this ARRA grant, if awarded, commit the City of Scottsdale to any long term or ongoing fiscal obligations beyond the grant period? Explain.

This program will be administered by Facilities Maintenance staff and will not require additional staff or departmental resources.

I support this proposed project and agree that my Department can implement it within the required guidelines and timeframe.

General Manager

Date

Once completed and signed, please submit to the Government Relations Office

AMERICAN RECOVERY & REINVESTMENT ACT (ARRA) – 2009

CITY OF SCOTTSDALE

Deadline PROJECT INFORMATION SHEET

Application

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11. Project Name: Energy Audit Program

12. ARRA Federal Funding Department/Program: Energy Efficiency and Conservation Block Grant (EECBG Program)

13. City Department(s) & Staff Contact(s) Information: Planning and Development Services, Anthony Floyd, Green Building Program Manager

14. Brief Description (2-3 paragraphs) describing project, activities, need, who served, measurable outcomes and benefits. Be sure to explain how this project will comply with all posted federal rules and regulations.

An energy audit is the first step to assess how much energy a building consumes, and to evaluate what measures can be taken to make the building more energy efficient. An energy audit will show problems that will, when corrected, save significant amounts of money over time. Unlike an on-line energy assessment program (i.e. – SRP Home Energy Manager), an on-site audit can pinpoint where a building is losing energy. Audits also determine the efficiency of heating, cooling, ventilation, water heating and lighting systems.

A professional energy auditor uses a variety of testing techniques and equipment to determine the energy efficiency performance of a building. Testing includes a blower door test, which measures the extent of leaks in the building envelope; infrared cameras, which reveal hard-to-detect areas of air infiltration and missing insulation; and duct leakage tests. The audit also includes an evaluation of past utility bills and projected energy savings. A final evaluation report provides a summary of problem areas and recommended energy improvements with expected savings.

The energy audit program will be made available for residential and small commercial buildings less than 5,000 square feet. The program could target specific geographic areas of the city and/or specific types of projects.

Certified energy auditors are being trained through the Southwest Building Science Training Center and Arizona Home Performance with Energy Star program. The Arizona Energy Office will help facilitate energy audit protocol for both residential and commercial buildings.

15. Number of jobs created or sustained with this project:

A minimum of 60 energy jobs; also the multiplier effect of contractor work based on recommended energy improvements will generate further jobs.

16. Project timeline (estimated start/completion): Can all deadlines be met for obligation of funding and completion of the project?

Start: July 1, 2009 or when funding becomes available.

Completion: June 30, 2010

17. Budget

Total Project Cost: \$230,000 (estimated at 460 residents at \$500 per house)

Amount from ARRA requested: \$230,000

Minimum amount acceptable to do project: \$100,000

City/non-federal funding commitment if required, cash/in-kind by source:

Indicate if Operating Project or Capital Project: Operating

18. Any previous or current federal funding received? Detail when appropriation/grant \$ awarded.

No

19. Possible Partnerships with eligible institutions, businesses or non-profits to bring AARA funding to the community?

No

20. Will this ARRA grant, if awarded, commit the City of Scottsdale to any long term or ongoing fiscal obligations beyond the grant period? Explain.

This program will be administered by Environmental Initiatives staff will not require additional staff or departmental resources. Once the funds allocated to the project have been expended, the program will cease.

I support this proposed project and agree that my Department can implement it within the required guidelines and timeframe.

General Manager

Date

Once completed and signed, please submit to the Government Relations Office

AMERICAN RECOVERY & REINVESTMENT ACT (ARRA) – 2009

CITY OF SCOTTSDALE
PROJECT INFORMATION SHEET

Application Deadline

1. Project Name:

Water, Wastewater and Reuse System Optimization Study

2. ARRA Federal Funding Department/Program:

Energy Efficiency and Conservation Block Grant

3. City Department(s) & Staff Contact(s) Information:

Water Resources Department

Chris Hassert, Planning and Engineering Director

4. Brief Description (2-3 paragraphs) describing project, activities, need, who served, measurable outcomes and benefits. Be sure to explain how this project will comply with all posted federal rules and regulations.

The Water, Wastewater and Reuse System Optimization Study consists of evaluating the City's Water, Wastewater and Reuse Systems and developing a set of Optimization strategies and tools that can be integrated into the systems operational plans. Approximately one third of the System Optimization Study is geared towards energy efficiency and savings. Once the study is completed and the strategies identified are implemented, electrical savings are anticipated but difficult to quantify at this point due to the limited number of case histories available for this type of optimization analysis and implementation program. However, similar sized utility systems have documented electrical savings of 10% or greater resulting from a comprehensive system optimization study and implementation similar to the one we are proposing. The difficulty in predicting resultant energy cost savings stems from the fact that each municipality possesses unique system parameters which do not easily compare from one system to the next.

It should also be noted that the optimization study is being conducted to improve other elements of our systems other than energy usage. Such elements include maximization of surface water sources, improvement of water quality and confirmation of sufficient pressures and fire flows. Therefore, this application only seeks to capture one third (\$500,000) of the total optimization study budget.

The portion of the system optimization study geared towards energy efficiency is expected to achieve objectives including:

- a. Establish a system baseline electricity usage profile.

- b. Identify and incorporate strategies for reducing system operational costs by reducing electrical usage.
- c. Examine system pump and motor efficiencies and recommend improvements.
- d. Develop an optimization tool capable of recognizing various constraints such as water source locations, water quality, energy usage, and reliability and redundancy.
- e. Generate cost models to predict estimated energy usage cost differences between the baseline condition and system adjustments and modifications recommended by the optimization tool.

5. Number of jobs created or sustained with this project: 12

6. Project timeline (estimated start/completion): Can all deadlines be met for obligation of funding and completion of the project?

Yes, a Request for Proposals is expected to be issued in June 2009.

7. Budget

Total Project Cost: \$1,500,000
 Amount from ARRA requested: \$500,000
 Minimum amount acceptable to do project: \$500,000
 City/non-federal funding commitment if required, cash/in-kind by source: NA

Indicate if Operating Project or Capital Project: Capital Project – This is a Capital Project conducted as an in depth analysis and study rather than a construction effort. Jobs created will be filled by private industry engineers and scientists.

8. Any previous or current federal funding received? Detail when appropriation/grant \$ awarded. No.

9. Possible Partnerships with eligible institutions, businesses or non-profits to bring AARA funding to the community?

Not Applicable

10. Will this ARRA grant, if awarded, commit the City of Scottsdale to any long term or ongoing fiscal obligations beyond the grant period? Explain.

Not applicable.

I support this proposed project and agree that my Department can implement it within the required guidelines and timeframe.


 General Manager

4/23/09
 Date

AMERICAN RECOVERY & REINVESTMENT ACT (ARRA) – 2009

CITY OF SCOTTSDALE
PROJECT INFORMATION SHEET

Application Deadline

1. Project Name: Ballfield Lighting – Horizon Park, Grayhawk Neighborhood Park/School, McDowell Mountain Ranch Park and Aztec Park/School.
2. ARRA Federal Funding Department/Program: Energy Efficiency – Energy Efficiency and Conservation Block Grant
3. City Department(s) & Staff Contact(s) Information: Community Services Department, Tim Barnard, X22357.
4. Brief Description (2-3 paragraphs) describing project, activities, need, who served, measurable outcomes and benefits. Be sure to explain how this project will comply with all posted federal rules and regulations.

This project is to re-light eleven sports fields at four different locations using new energy efficient lighting systems.

There are four softball fields at Horizon Park with soccer overlays in the outfield; two ball fields at Grayhawk School/Park with soccer overlays in the outfield; two soccer fields at McDowell Mountain Ranch Park and two ball fields and a soccer field at Aztec School/Park.

Use of the new ballfield lighting technology will result in reducing the city's use of energy, a reduction in fossil fuel emissions, and the creation of jobs and provide operational efficiency of the lighting for our sports programs.

New lighting technology could allow the City to reduce the current number of fixtures by 30%, from 415 fixtures to 292 fixtures. Light levels on the fields will all remain the same or will be increase to the approved standards of a constant 50 foot candles on infields and 30 foot candles on outfields and soccer fields. This new lighting technology is readily available from U.S. based suppliers.

Based on current usage and utility rates it is anticipated that \$1,708,194 in energy savings will be realized over a 25 year life cycle or \$68,328 per year over the existing equipment. These savings would also result in 4,428.1 Metric Tons of CO2 saved or reduced over 25 years by utilizing the new technology.

A minimum of eleven different youth sports groups with 6,979 participants, school sports teams and over 100 adult sports teams utilize the fields at Aztec School/Park, Grayhawk School/Park, McDowell Mountain Ranch Park and Horizon Park. The facilities at Grayhawk, Aztec and McDowell Mountain Ranch are also utilized by the adjacent schools during the day for physical education classes and recess activities in addition to use by the school sports teams. The amount of use for just the after school portion of field use during FY 07/08 was 15,852 hours. A more conservative estimate of 6,600 hours of lighted use per year was used for the calculations for this application.

This project will benefit users with higher quality lighted fields and neighbors will see a reduction in light pollution (spill and glare) generated by the existing field lighting.

5. Number of jobs created or sustained with this project: 8-10
6. Project timeline (estimated start/completion): Can all deadlines be met for obligation of funding and completion of the project? Yes the deadlines can be met. Estimate 90-100 days for bid and award and approximately 180 days to complete installation while working around facility scheduling and use.
7. Budget
 - Total Project Cost: \$1,462,595
 - Amount from ARRA requested: \$1,462,595
 - Minimum amount acceptable to do project: \$551,500
 - City/non-federal funding commitment if required, cash/in-kind by source: \$0Indicate if Operating Project or Capital Project: Capital
8. Any previous or current federal funding received? Detail when appropriation/grant \$ awarded. No.
9. Possible Partnerships with eligible institutions, businesses or non-profits to bring AARA funding to the community? Scottsdale Unified School District.
10. Will this ARRA grant, if awarded, commit the City of Scottsdale to any long term or ongoing fiscal obligations beyond the grant period? Explain. No, the grant is for replacement of existing lighting fixtures which are already included in the city budget.

I support this proposed project and agree that my Department can implement it within the required guidelines and timeframe.

General Manager

Date

Once completed and signed, please submit to the Government Relations Office

AMERICAN RECOVERY & REINVESTMENT ACT (ARRA) – 2009

CITY OF SCOTTSDALE PROJECT INFORMATION SHEET

Application Deadline

1. Project Name: Energy training for code compliance
2. ARRA Federal Funding Department/Program: Energy Efficiency and Conservation Block Grant (EECBG Program)
3. City Department(s) & Staff Contact(s) Information: Planning and Development Services, Michael Clack, Chief Development Officer
4. Brief Description (2-3 paragraphs) describing project, activities, need, who served, measurable outcomes and benefits. Be sure to explain how this project will comply with all posted federal rules and regulations.

Provide training program for planners on preliminary energy design reviews, building plan reviewers on energy modeling and performance analysis, and building inspectors on building thermal envelope, heating/cooling, ventilation, water heating and lighting. Staff would attend seminars, and on line training. We would also purchase books and other training material from outside entities.

Scottsdale adopted the 2006 edition of the International Energy Conservation Code (IECC) in July 2007 which became effective September 1, 2007. The amended code requires all commercial buildings to be at least 15% more energy efficient than baseline requirements. This affects exterior building design (thermal envelope), internal building loads and heating/cooling equipment. As such, an integrated design approach plays a vital role in meeting these energy performance requirements.

Energy code compliance should be determined early in the design process and preferably during the design development phase. Energy modeling and performance analysis is the most effective tool for testing the energy performance of a building at various stages of design (schematic and design development). Achieving a 15% energy cost savings will also help qualify buildings for the energy segment of most green building programs including the City of Scottsdale and LEED rating program.

5. Number of jobs created or sustained with this project:

Training would be provided by outside consultants.

6. Project timeline (estimated start/completion): Can all deadlines be met for obligation of funding and completion of the project?

Start: July 1 or when funding becomes available.
Completion: June 30, 2010 (or 12 months from receipt of funding)

7. Budget

Total Project Cost: \$60,000 (\$2,000 per person)
Amount from ARRA requested: \$60,000
Minimum amount acceptable to do project: \$30,000. If funding were not provided we will train as funding becomes available (at a much slower pace).
City/non-federal funding commitment if required, cash/in-kind by source:

Indicate if Operating Project or Capital Project: Operating.

8. Any previous or current federal funding received? Detail when appropriation/grant \$ awarded.

No

9. Possible Partnerships with eligible institutions, businesses or non-profits to bring AARA funding to the community?

10. Will this ARRA grant, if awarded, commit the City of Scottsdale to any long term or ongoing fiscal obligations beyond the grant period? Explain.

No

I support this proposed project and agree that my Department can implement it within the required guidelines and timeframe.

General Manager

Date

Once completed and signed, please submit to the Government Relations Office

AMERICAN RECOVERY & REINVESTMENT ACT (ARRA) – 2009

CITY OF SCOTTSDALE

Deadline PROJECT INFORMATION SHEET

Application

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21. Project Name: PV Solar Panels

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22. ARRA Federal Funding Department/Program:
Fire Department/Eldorado Park Fire Station 1

23. City Department(s) & Staff Contact(s) Information
Vivek Galav, 480-312-7245
Bob Deleon, 480-312-1812

24. Brief Description (2-3 paragraphs) describing project, activities, need, who served, measurable outcomes and benefits. Be sure to explain how this project will comply with all posted federal rules and regulations.

Project Details:

On March 22, 2005, Scottsdale City Council approved resolution No. 6644 establishing the Green Building (LEED) Policy for new city buildings and remodels. Station 1 has a budget that includes many LEED items but currently does not have funding to support this proposal.

The proposed project calls for the installation of a 20-kilowatt (kW) photovoltaic solar system, mounted to the rooftop of Fire Station #1 in the City of Scottsdale. The system will consist primarily of a mounting structure, fixed tilt solar panels, electrical inverters, and associated electrical interconnects necessary for safe operation and interface with the local utility grid. The system will not have any moving parts and will require minimal maintenance to keep the panels clean and ensure proper electrical output.

Project Activities/Measurable Outcomes:

This project utilizes a professional designer (electrical engineer) to optimize the size of the solar PV system, and also a licensed contractor to install and configure the UL-approved system for correct operation. Because the Fire Station is also seeking LEED Certification, a qualified commissioning authority will also verify the installation and performance of the solar PV system as part of the required commissioning scope. The output of the solar system will be monitored separately from other building systems, so that the renewable energy production/savings can be accurately measured on an ongoing basis, and so that additional utility incentives can be pursued.

Needs/Benefits:

The installation of on-site renewable energy stimulates the economy in the short term, while also laying a foundation for long-term energy security and a sustainable energy infrastructure. A solar PV system will reduce the total electric consumption of the building, reduce green house gas emissions, reduce peak power costs for the department, and will provide clean power for the building for the next 20-25 years. The proposed system is intended to produce approximately 12.5 % (24,229 kWh) of peak electricity consumption per year, and to offset 33,457 pounds of CO₂ emissions per year.

The installation of renewable energy will also contribute to the LEED Certification strategy for the project, providing up to 3 additional points in the certification process. The base building is already employing a variety of energy conservation measures required by LEED, thus allowing for a smaller, right-sized solar PV system and a shorter return on investment. Because the cost of energy is perpetually increasing in all markets, on-site renewable energy generation will effectively offset the increasing cost of electricity for the life of the system, which is typically 20-25 years. The adoption of renewable energy technology will strengthen the position of Scottsdale as a progressive City, focused on sustainability, and will help to maintain the momentum gained with prior green building programs.

25. Number of jobs created or sustained with this project:

At a minimum, the proposed project will require the services of a professional solar designer, licensed contractor, and third party commissioning authority to properly design, install, and verify the performance of the solar PV system. It is likely that the contractor may also employ additional installers/electricians to support the installation process.

Beyond the immediate scope of the project, it should be noted that solar PV systems generate more jobs per installed megawatt than any other form of renewable energy. According to a 2007 study¹, Photovoltaic (PV) panels generate 15.2 manufacturing jobs per megawatt installed, and 7.1 construction and installation jobs per megawatt--more jobs in both categories than any other renewable energy source. Other studies from 2007² and 2008^{3,4} indicate 15-30 jobs created per megawatt installed of solar PV. Producing electricity from PV provides jobs to roofers, electricians, sheet metal workers, and other skilled laborers. Approximately 80 percent of the jobs in PV come from manufacturing and assembly. The remaining jobs come mostly from installing the PV panels. There are local suppliers and installers that can supply and install PV panels.

While the manufacturing and design of the system may or may not occur within the state of Arizona, the installation and commissioning services would be provided by in-state businesses, generating the need for green jobs and locally skilled laborers within the state of Arizona.

References:

- 1 – Apollo Alliance and Urban Habitat, "*Community Jobs in the Green Economy*," 2007
- 2 – Arizona Department of Commerce, "Arizona Solar Electric Roadmap Study: Full Report," 2007
- 3 – UC Berkeley Center for Energy, Resources and Economic Sustainability, "*Energy Efficiency, Innovation, and Job Creation in California*," 2008
- 4 – Solar Energy Industries Association, "Solar Energy Fuels Domestic Job Growth: A Blueprint for Job Creation and Economic Security," 2008

26. Project timeline (estimated start/completion): Can all deadlines be met for obligation of funding and completion of the project?

Estimated fire station construction start – April 2010

Estimated fire station construction completion – May 2011

27. Budget

Total Project Cost: \$160,000 (CIP Budget)

Amount from ARRA requested: \$160,000.00

Minimum amount acceptable to do project: \$160,000.00

City/non-federal funding commitment if required, cash/in-kind by source:

Indicate if Operating Project or Capital Project: Capital Project #B0601

28. Any previous or current federal funding received? Detail when appropriation/grant \$ awarded.

N/A

29. Possible Partnerships with eligible institutions, businesses or non-profits to bring AARA funding to the community?

City could partner with APS or SRP by conveying to APS or SRP the title to and interest in any environmental credits associated with the electrical power produced from the City's PV system. Currently, APS provides a one-time incentive of up to \$12,500 (at a rate of \$2.5/KWH) after one year of PV system's operation. Starting June 1, 2009, SRP will provide a one-time incentive, after monitoring, of up to \$45,000 (at a rate of \$2,250/KW). These incentives are subject to change at the utilities discretion.

30. Will this ARRA grant, if awarded, commit the City of Scottsdale to any long term or ongoing fiscal obligations beyond the grant period? Explain.

No

I support this proposed project and agree that my Department can implement it within the required guidelines and timeframe.

WILLIAM L. MCDONALD
General Manager

Date

Once completed and signed, please submit to the Government Relations Office

Intergovernmental Relations

Date

- () – Approved
- () – Not Approved

Comments:

AMERICAN RECOVERY & REINVESTMENT ACT (ARRA) – 2009

CITY OF SCOTTSDALE

Deadline PROJECT INFORMATION SHEET

Application

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31. Project Name: PV Solar Panels

32. ARRA Federal Funding Department/Program:
Fire Department/Cactus Acre Fire Station 8

33. City Department(s) & Staff Contact(s) Information
Vivek Galav, 480-312-7245
Teresa Martin, 480-312-1866

34. Brief Description (2-3 paragraphs) describing project, activities, need, who served, measurable outcomes and benefits. Be sure to explain how this project will comply with all posted federal rules and regulations.

Project Details:

On March 22, 2005, Scottsdale City Council approved resolution No. 6644 establishing the Green Building (LEED) Policy for new city buildings and remodels. Station 8 has a budget that includes many LEED items but currently does not have funding to support this proposal.

The proposed project calls for the installation of a 20-kilowatt (kW) photovoltaic solar system, mounted to the rooftop of Fire Station #8 in the City of Scottsdale. The system will consist primarily of a mounting structure, fixed tilt solar panels, electrical inverters, and associated electrical interconnects necessary for safe operation and interface with the local utility grid. The system will not have any moving parts and will require minimal maintenance to keep the panels clean and ensure proper electrical output.

Project Activities/Measurable Outcomes:

This project utilizes a professional designer (electrical engineer) to optimize the size of the solar PV system, and also a licensed contractor to install and configure the UL-approved system for correct operation. Because the Fire Station is also seeking LEED Certification, a qualified commissioning authority will also verify the installation and performance of the solar PV system as part of the required commissioning scope. The output of the solar system will be monitored separately from other building systems, so that the renewable energy production/savings can be accurately measured on an ongoing basis, and so that additional utility incentives can be pursued.

Needs/Benefits:

The installation of on-site renewable energy stimulates the economy in the short term, while also laying a foundation for long-term energy security and a sustainable energy infrastructure. A solar PV system will reduce the total electric consumption of the building, reduce green house gas emissions, reduce peak power costs for the department, and will provide clean power for the building for the next 20-25 years. The proposed system is intended to produce approximately 12.5 % (24,229 kWh) of peak electricity consumption per year, and to offset 33,457 pounds of CO₂ emissions per year.

The installation of renewable energy will also contribute to the LEED Certification strategy for the project, providing up to 3 additional points in the certification process. The base building is already employing a variety of energy conservation measures required by LEED, thus allowing for a smaller, right-sized solar PV system and a shorter return on investment. Because the cost of energy is perpetually increasing in all markets, on-site renewable energy generation will effectively offset the increasing cost of electricity for the life of the system, which is typically 20-25 years. The adoption of renewable energy technology will strengthen the position of Scottsdale as a progressive City, focused on sustainability, and will help to maintain the momentum gained with prior green building programs.

35. Number of jobs created or sustained with this project:

At a minimum, the proposed project will require the services of a professional solar designer, licensed contractor, and third party commissioning authority to properly design, install, and verify the performance of the solar PV system. It is likely that the contractor may also employ additional installers/electricians to support the installation process.

Beyond the immediate scope of the project, it should be noted that solar PV systems generate more jobs per installed megawatt than any other form of renewable energy. According to a 2007 study¹, Photovoltaic (PV) panels generate 15.2 manufacturing jobs per megawatt installed, and 7.1 construction and installation jobs per megawatt--more jobs in both categories than any other renewable energy source. Other studies from 2007² and 2008^{3,4} indicate 15-30 jobs created per megawatt installed of solar PV. Producing electricity from PV provides jobs to roofers, electricians, sheet metal workers, and other skilled laborers. Approximately 80 percent of the jobs in PV come from manufacturing and assembly. The remaining jobs come mostly from installing the PV panels. There are local suppliers and installers that can supply and install PV panels.

While the manufacturing and design of the system may or may not occur within the state of Arizona, the installation and commissioning services could be provided by in-state businesses, generating the need for green jobs and locally skilled laborers within the state of Arizona.

References:

- 1 – Apollo Alliance and Urban Habitat, "*Community Jobs in the Green Economy*," 2007
- 2 – Arizona Department of Commerce, "Arizona Solar Electric Roadmap Study: Full Report," 2007
- 3 – UC Berkeley Center for Energy, Resources and Economic Sustainability, "*Energy Efficiency, Innovation, and Job Creation in California*," 2008
- 4 – Solar Energy Industries Association, "Solar Energy Fuels Domestic Job Growth: A Blueprint for Job Creation and Economic Security," 2008

36. Project timeline (estimated start/completion): Can all deadlines be met for obligation of funding and completion of the project?

Estimated fire station construction start – April 2010

Estimated fire station construction completion – May 2011

37. Budget

Total Project Cost: \$160,000 (CIP Budget)

Amount from ARRA requested: \$160,000.00

Minimum amount acceptable to do project: \$160,000.00

City/non-federal funding commitment if required, cash/in-kind by source:

Indicate if Operating Project or Capital Project: Capital Project #B0803

38. Any previous or current federal funding received? Detail when appropriation/grant \$ awarded.

N/A

39. Possible Partnerships with eligible institutions, businesses or non-profits to bring AARA funding to the community?

City could partner with APS by conveying to APS the title to and interest in any environmental credits associated with the electrical power produced from the City's PV system. Currently, APS provides a one-time incentive of up to \$12,500 (at a rate of \$2.5/KWH) after one year of PV system's operation. These incentives are subject to change at the utilities discretion.

40. Will this ARRA grant, if awarded, commit the City of Scottsdale to any long term or ongoing fiscal obligations beyond the grant period? Explain.

No

I support this proposed project and agree that my Department can implement it within the required guidelines and timeframe.

WILLIAM L. MCDONALD
General Manager

Date

Once completed and signed, please submit to the Government Relations Office

Intergovernmental Relations

Date

- () – Approved
- () – Not Approved

Comments:

AMERICAN RECOVERY & REINVESTMENT ACT (ARRA) – 2009

CITY OF SCOTTSDALE

Deadline PROJECT INFORMATION SHEET

Application

41. Project Name:
"Greening Scottsdale" Commercial Rebate Program

42. ARRA Federal Funding Department/Program:
Energy Efficiency Community Block Grant (EECBG)

43. City Department(s) & Staff Contact(s) Information
Economic Vitality:
Economic Development – Jennifer Graves, 312-7125
Business Services – Rachel Busch, 312-7321

44. Brief Description (2-3 paragraphs) describing project, activities, need, who served, measurable outcomes and benefits. Be sure to explain how this project will comply with all posted federal rules and regulations.

The goal of the Economic Vitality Department is to provide for the long-term economic sustainability of the community through a comprehensive and coordinated program of economic development, tourism development, revitalization, and support of existing businesses. In particular, the business services and economic development divisions work to attract, retain, and expand businesses to bring new jobs to the community. As competition among communities increases, it is more important than ever to provide programs that help offset the costs associated with business expansion and retention. This proposed program will do just that, while also helping Scottsdale become more sustainable.

The Commercial Rebate Program will provide a rebate to new or existing businesses that implement sustainable measures into their tenant improvements (i.e. low energy lighting, solar energy, HVAC, etc.). Qualified applicants will be required to conduct an energy audit of their space. (Staff has developed a companion proposal for ARRA funds for an energy audit rebate program, administered by the Environmental Initiatives staff.) The audit will provide specific recommendations that each business can implement to improve their sustainability. We are proposing to provide a rebate of 50% of the cost of the improvements, up to a maximum of \$15,000 per project. The outcome of this program will be twofold: 1) by reducing business start-up costs we will be able to more effectively attract and retain employers, 2) buildings in Scottsdale will become more sustainable and energy efficient.

This program complies with all of the posted federal rules and regulations outlined in the EECBG. It falls under the "Financial Incentive Programs and Mechanisms for energy efficiency improvements" criteria.

45. Number of jobs created or sustained with this project:

It is difficult to quantify or estimate the number of jobs that will be created or sustained with this program. As previously stated, the intent of the program is to create jobs, promote environmental sustainability and encourage business revitalization. The program will have measures in place to track net new employment gains for the community.

46. Project timeline (estimated start/completion): Can all deadlines be met for obligation of funding and completion of the project?

If funded, the Economic Vitality staff will get the program up and running within the required 120 days. The program will be completed at either the end of the fund term (3 years) or once the funds have been completely allocated, whichever comes first.

47. Budget

Total Project Cost: **\$500,000**

Amount from ARRA requested: **\$500,000**

Minimum amount acceptable to do project: **\$300,000**

City/non-federal funding commitment if required, cash/in-kind by source:

None

Indicate if Operating Project or Capital Project: **Operating project**

48. Any previous or current federal funding received? Detail when appropriation/grant \$ awarded.

No

49. Possible Partnerships with eligible institutions, businesses or non-profits to bring ARRA funding to the community?

None

50. Will this ARRA grant, if awarded, commit the City of Scottsdale to any long term or ongoing fiscal obligations beyond the grant period? Explain.

This program will be administered by existing Economic Vitality staff and will not require additional staff or departmental resources. Once the funds allocated to the project have been expended, the program will cease.